NEW & REBUILT
SIGNAL EQUIPMENT

ENGINEERING & SHOP SERVICES

ASSEMBLY & INSTALLATIONS

# *SignalMasters®, Inc.*

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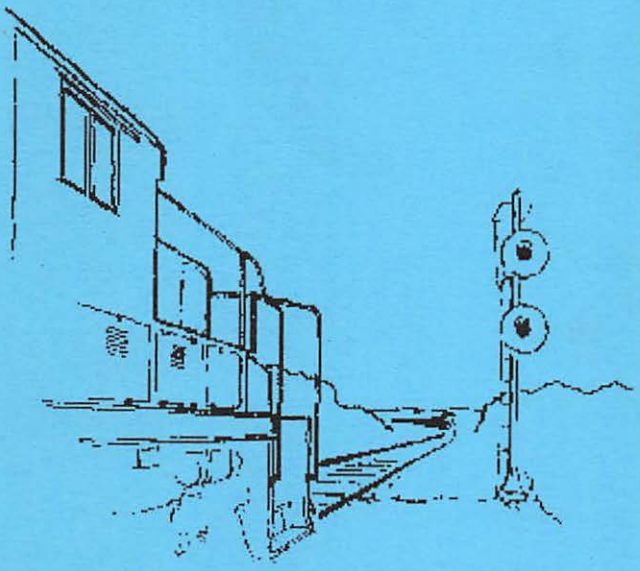

## PRODUCT CATALOG

## About Our Equipment & Services

Equipment listed in this catalog includes both new and secondhand surplus signal equipment we've purchased from various roads.

All secondhand equipment is rebuilt prior to sale, unless noted "AS IS".

New equipment is identified as "NOS" (New Old Stock), and may show signs of being shuffled from storehouse to storehouse.

For terms of sales, pricing and warranty info, see page 43.

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# WAYSIDE SIGNALS

| Item Description | Each |
|---|---|
| GRS SA-1 Searchlight Housing, rebuilt | $ 750.00 |
| GRS SA-1 Searchlight Housing (NOS) | $ 1150.00 |
| US&S Style H-2 Searchlight Housing | $ 750.00 |
| US&S Style H-5 Searchlight Housing | $ 750.00 |
| Safetran CLS -20 signals, 3 aspects | $ 350.00 |
| Safetran CLS -20 signals, 3 aspects (NOS) | $ 550.00 |
| Safetran CLS-10 signals, 3 aspects | $ 350.00 |
| Safetran Uni-Lens signal, 3 aspect (NOS) | $ 750.00 |
| GRS Style FA 3 aspect dwarf signal | $ 200.00 |
| US&S Style N-2 Dwarf | $ 200.00 |
| US&S Style N-3 Dwarf | $ 275.00 |
| Safetran 5" "gooseneck" mounting brackets | $ 55.00 |
| Mounting bracket, USS searchlight | $ 55.00 |
| Background support bracket, USS searchlight | $ 10.00 |
| Hood, long US&S Searchlight | $ 27.50 |
| Hood, short, US&S Searchlight | $ 27.50 |
| Searchlight signal background, 35" dia | $ 45.00 |
| Lens Assy, Yellow, w/ mounting ring, US&S | $ 35.00 |
| Lens Assy, Green, w/ mounting ring, US&S | $ 35.00 |
| Lens only, 5-3/8" Green | $ 10.00 |
| Lens only, 5-3/8" Yellow (NOS) | $ 10.00 |
| Lens only, 5-3/8" Red | $ 10.00 |
| Mast, 5" x 16'-0" for back to back signals | $ 250.00 |
| Safetran Split Jct Box Base for 5" mast | $ 195.00 |
| GRS Ladder Foundations | $ 90.00 |
| GRS Searchlight front of mast mtg bracket | $ 110.00 |

# Highway Crossing

| Item Description | Each |
|---|---|
| Safetran Model "S" Gate Mechanism | $ 950.00 |
| GRS Model "D" Gate Mechanism | $ 950.00 |
| Western-Cullen-Hayes 3593 Gate Mech (NOS) | $1750.00 |
| Western-Cullen-Hayes 3593 Gate Mech (Rebuilt) | $ 950.00 |
| L&W Gate Arm Lamp, 6" 1024-X | $ 22.00 |
| Western-Cullen-Hayes 5" Jury Mast, 7'-0" | $ 150.00 |
| Western-Cullen-Hayes Jct Box base for 5" mast | $ 150.00 |
| Western-Cullen-Hayes Flasher Jct Box X-Arm | $ 75.00 |
| Western-Cullen-Hayes Flasher Sidelight Assy | $ 75.00 |
| Safetran Flasher Mast only 4" dia x 16'-0" | $ 450.00 |
| Crossbuck, w/mounting hardware for 5" mast | $ 75.00 |
| Counterweights, 50 lbs | $ 25.00 |
| Counterweight Arms, WCH-GRS | $ 150.00 |
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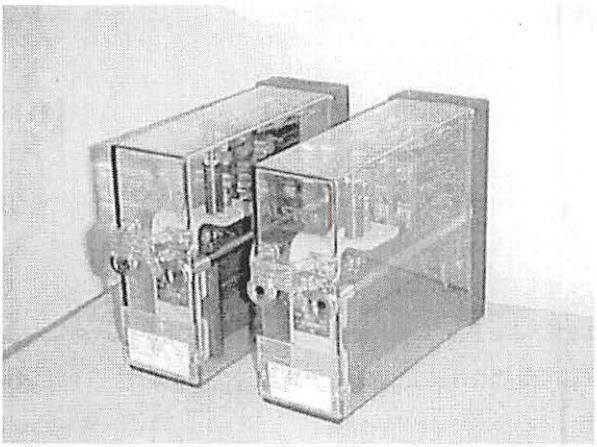
# Gate Arms

| Item Description | Each |
|---|---|
| Aluminum Base Section, 16' | $ 125.00 |
| Fiberglass Intermediate Section, 10' | $ 125.00 |
| Fiberglass Intermediate Section, 12' | $ 125.00 |
| Fiberglass Intermediate Section, 16' | $125.00 |
| Fiberglass Tip Section, 8' | $ 75.00 |
| Fiberglass Tip Section, 12' | $ 100.00 |
| Fiberglass Tip Section, 16' | $ 125.00 |
| Aluminum Tip Section, 14' | $ 125.00 |
| US&S Aluminum Hex Gate Assy, w/ Lamps | $ 300.00 |
| L&W Wood Gate Assy, 16-20' | $ 350.00 |
| | |

# GRS B1 Biased Neutral Relays

| Ohms | Contacts | Notes | GRS Cat No | Each |
|---|---|---|---|---|
| 0.5 | 4FB-2F-1B | | A62-120 | $270.00 |
| 1 | 6FB | | A62-550 | $270.00 |
| 2 | 4FB-2F-1B | HD Contacts | A62-623 | $ 285.00 |
| 30 | 6FB | | A62-551 | $ 265.00 |
| 63 | 4FB-2F-1B | | A62-130 | $ 265.00 |
| 63 | 6FB | | A62-140 | $ 255.00 |
| 100 | 6FB | | A62-543 | $ 284.00 |
| 100 | 4FB-2F-1B | FSO applications | A62-125 | $ 255.00 |
| 100 | 2FB-4F-2B | HD Contacts | A62-608 | $ 325.50 |
| 250 | 6FB | | A62-549 | $ 284.00 |
| 375 | 4FB-2F-1B | | A62-131 | $ 265.00 |
| 500 | 4FB-2F-1B | HD Contacts | A62-613 | $ 287.50 |
| 500 | 4FB-2F-1B | | A62-122 | $ 265.00 |
| 500 | 6FB | | A62-125 | $ 265.00 |
| 750 | 4FB-2F-1B | Trakode | A62-128 | $225.00 |
| 750 | 4FB-2F-1B | Trakode | A62-129 | $225.00 |
| 750 | 4FB-2F-1B | Trakode | A62-132 | $225.00 |
| 1000 | 2FB-4F-2B | | A62-552 | $ 222.50 |
| 1000 | 2FB-3F-3B | | A62-553 | $ 298.50 |
| 1000 | 4FB-2F-1B | | A62-624 | $ 265.00 |
| 2100 | 2F-2B | 24v EHD Contacts | A62-604 | $ 315.50 |
| 2100 | 4FB-2F-1B | | A62-554 | $ 298.50 |
| 2100 | 2FB-4F-2B | | A62-555 | $ 309.50 |
| 2100 | 2FB-4F-2B | | A62-578 | $ 309.50 |
| 2100 | 4FB-2F-1B | 2FB Gold contacts | A62-603 | $ 265.00 |
| | | | | |



# GRS B1 Neutral Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 0.24 | 1F-2B | | A62-560 | $ 235.50 |
| 1 | 4F-2B | Intermittent train ctrl | A62-522 | $ 235.50 |
| 1.8 | 6FB | | A62-260 | $228.00 |
| 1.8 | 4F-2B | Track relay | A62-270 | $ 250.00 |
| 1.8 | 4FB-2F-1B | Track relay | A62-275 | $ 225.00 |
| 4 | 6FB | Track relay | A62-261 | $ 251.50 |
| 4 | 4F-2B | Track relay | A62-271 | $ 250.00 |
| 4 | 4FB-2F-1B | Track relay | A62-276 | $ 250.00 |
| 6 | 4FB | Overlay tk ckt | A62-293 | $ 234.00 |
| 9 | 6FB | Coded track app | A62-314 | $ 379.00 |
| 28.5 | 2FB-3F-3B | AC track circuits | A62-325 | $ 187.00 |
| 36 | 4FB-1F-2B | | A62-559 | $ 219.00 |
| 42 | 2FB-3F-2B | Coded track app | A62-313 | $ 388.00 |
| 50 | 4FB-2F-1B | Pulse bridging | A62-315 | $ 278.00 |
| 60 | 6FB | | A62-557 | $ 212.50 |
| 84 | 4FB-2F-1B | | A62-305 | $ 264.50 |
| 84 | 6FB | | A62-295 | $ 284.00 |
| 100 | 4FB-2F-1B | HD contacts | A62-615 | $ 279.00 |
| 100 | 4F-2B | Overlay tk ckt | A62-317 | $ 242.00 |
| 100 | 4FB-2F-1B | Trakode | A62-319 | $ 237.00 |
| 100 | 6FB | | A62-558 | $ 284.00 |
| 135/65 | 4FB-2F-1B | Quick Acting | A62-335 | $ 273.00 |
| 200 | 1F-1B | Impulse track ckts | A62-323 | $ 1227.00 |
| 350 | 4F-2B | | A62-300 | $ 221.50 |
| 350 | 4FB-2F-1B | | A62-306 | $ 278.00 |
| 350 | 4FB-2F-1B | HD silver backs | A62-309 | $252.00 |
| 450/8 | 4FB-2F-1B | Trakode | A62-312 | $ 235.00 |
| 460 | 4FB | | A62-556 | $ 234.00 |
| 500 | 4FB-2F-1B | | A62-277 | $ 216.00 |
| 500 | 6FB | | A62-262 | $ 210.50 |
| 500 | 6FB | | A62-580 | $ 283.00 |
| 500 | 4FB-2F-1B | HD silver backs | A62-310 | $ 233.00 |
| 500 | 4FB-2F-1B | HD carbon back | A62-612 | $ 278.00 |
| 500 | 4FB-1F-2B | .090 front open | A62-544 | $ 219.00 |
| 500 | 2FB-1B-2F | EHD-MD cont | A62-546 | $ 264.00 |
| 900 | 4FB-1F-2B | | A62-278 | $ 219.00 |
| 900 | 6FB | | A62-296 | $ 212.50 |
| 900 | 4FB-2F-1B | | A62-308 | $ 216.00 |
| 900 | 4FB-2F-1B | HD silver backs | A62-311 | $ 236.50 |
| 1800 | 4FB-2F-1B | Trakode | A62-318 | $ 240.00 |
| 1800 | 4FB-1F-2B | Trakode | A62-320 | $278.50 |

# GRS B1 Neutral Slow Acting Relays

| Ohms | Contacts | Characteristics | GRS Cat No. | Each |
|---|---|---|---|---|
| 220 | 4FB-2F-1B | Slow Pick, 1.35s @.05a | A62-340 | $ 313.00 |
| 220 | 4FB-2F-1B | Slow Pick, 1.2s @.05a | A62-611 | $ 313.00 |
| 220 | 6FB | Slow Pick, 1.35s @.05a | A62-345 | $ 295.00 |
| 300 | 4FB-2F-1B | Slow Pick, 1.4s @13.2v | A62-341 | $ 313.00 |
| 124 | 4FB-2F-1B | Slow Pick, 1.25s @11v<br>Slow Rel, 1.5s @11v | A62-425 | $ 259.50 |
| 194 | 4FB-2F-1B | Slow Pick, 1.1s @10.5v<br>Slow Rel, .9-1.1s @10v | A62-350 | $ 259.50 |
| 194 | 4FB | Slow Rel, 3-3.75s @12v | A62-360 | $ 232.00 |
| 194 | 4FB-2F-1B | Slow Rel, 1 sec @ 10v | A62-357 | $ 251.00 |
| 194 | 4FB-2F-1B | Slow Rel, 2.8s @10v | A62-358 | $ 297.50 |
| 194 | 4FB-2F-1B | Slow Rel, 1-1.25s @10v | A62-614 | $ 330.50 |
| 194 | 6FB | Slow Rel, 1-1.25s @10v | A62-359 | $ 232.00 |
| 194 | 4FB | Slow Rel, 2.5-2.75s @ 9v | A62-602 | $ 286.00 |
| 194 | 4FB | Slow Rel, 3-3.75s @12v | A62-617 | $ 286.00 |
| 450 | 4FB | Slow Rel, 0.9s @10v | A62-355 | $ 236.50 |
| 460 | 2FB | Slow Rel, 3.0s @9v | A62-353 | $ 252.00 |
| 194 | (B2) 12FB | Slow Rel, .8-1.1s@ 10v | A62-607 | $ 521.00 |

# GRS B1 Specific Application Relays

| Ohms | Contacts | Characteristics | GRS Cat No. | Each |
|---|---|---|---|---|
| 24 | 2FB | Partial slow release | A62-365 | $ 232.00 |
| 80 | 2FB | Partial slow release | A62-596 | $ 249.50 |
| 80 | 2F-4B | Slow rel, 0.1s @ 2v | A62-380 | $ 249.50 |
| 194 | 4FB(HD) | Slow rel, 3-3.75s @12v | A62-617 | $ 285.50 |
| 210 | 4FB | Partial slow release | A62-601 | $ 218.00 |
| 300 | 4FB-2F-1B | Slow rel, 1.7s @8.4v | A62-369 | $ 274.50 |
| 460/460 | 4FB-2F-1B | Slow rel, .8-.9s @21.6v<br>Lower coil only | A62-372 | $ 286.00 |
| 460 | 2FB-4F-2B | Slow rel, 2s @ 32v, HD | A62-542 | $ 344.00 |
| 460 | 2F-1B | Slow rel, 2.9s @ 32v | A62-562 | $ 249.50 |
| 460 | 4F-2B | Slow rel, 2.0s @ 32v | A62-563 | $279.00 |
| 460 | 4FB | Partial slow release | A62-564 | $ 311.00 |
| 460 | 4FB-1F-2B | Slow rel, 2s @ 32v | A62-565 | $ 293.00 |
| 460 | 2FB-3F-3B | Slow rel, 2.5s @ 32v HD | A62-566 | $278.50 |
| 800 | 4FB-2F-1B | Slow rel, .9s @ 10v | A62-370 | $ 258.50 |

# GRS B Polar Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 125/.14 | 4NR-2FB-2F | B2 w/HD Contacts | A62-585 | $ 2450.00 |
| 500 | 4FB-4NR | B2 | A62-391 | $ 2705.50 |
| 500 | 6NR | B2 | A62-609 | $ 2450.00 |
| 520 | 2NR | B1 Gnd detectr relay | A62-567 | $ 2298.00 |

# GRS B1 Power Transfer Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 50-50 | 2FB HD | 10VAC | A62-401 | $ 235.50 |
| 100-100 | 6FB HD | 10VAC | A62-406 | $ 235.50 |
| 100-100 | 6FB HD | 10VAC | A62-579 | $ 237.50 |
| 100-100 | 6FB HD | 10VAC | A62-567 | $ 237.50 |
| | | | | |

# GRS B1 Primary-Secondary Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 4 | 4F-2B | Primary | A62-410 | $ 267.50 |
| 220 | 3FB-3B-1CBO | Secondary | A62-415 | $ 267.50 |
| 400 | 11FB-1CBO | B2 Secondary | A62-417 | $ 267.50 |
| 3100 | 2FB-2F-4B | Secondary | A62-541 | |

# GRS B1 Switch Control Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 500 | 4FB | Low Voltage | A62-427 | $ 188.00 |
| 500 | 2F-2B | Low or High Voltage | A62-429 | $ 277.50 |
| .045-450 | 2FB-5F-1B | High Voltage | A62-424 | $ 369.00 |

# GRS B1 Switch Overload Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| .064-135 | 2CBO | Low Voltage -18 amps | A62-430 | $ 256.50 |
| .064-135 | 2CBO | High Voltage-12 amps | A62-431 | $ 243.00 |
| 1.8-220 | 2CBO | High Voltage- 10 amp | A62-433 | $ 344.00 |
| .068-1225 | 2B | High Voltage-12 amps | A62-432 | $ 269.50 |
| .064-530 | 2FB (MB) | High Voltage-12 amps | A62-605 | $ 268.50 |
| .068-230 | 2FB (MB) | High Voltage-11.5 amp | A62-545 | $ 268.50 |

# GRS VTB Polar Biased Single Armature Relays

| Volts | Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|---|
| — | 0.24 | 2FB | Track | A62-491 | $ 786.00 |
| — | 0.20 | 2FB | Track | A62-537 | $ 706.50 |
| — | 0.24 | 3FB | Track | A62-492 | $ 635.00 |
| — | 34 | 3FB | Track repeater | A62-538 | $ 786.00 |
| — | 4 | 2FB | Approach track | A62-498 | $ 635.00 |
| 10-12 | 34 | 2FB | Line repeater | A62-497 | $ 786.00 |
| 10-12 | 200 | 2FB | Line | A62-490 | $ 786.00 |
| 10-12 | 34 | 1FB-2F- | Line repeater | A62-535 | $ 786.00 |
| 10-12 | 100 | 1FB-2F- | Line | A62-536 | $ 786.00 |

# GRS VTB Polar Biased Double Armature Relays

| Volts | Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|---|
| — | .20-.20 | 1FB-2F-1B | Track | A62-629 | $ 979.00 |
| — | 0.20 | 1FB-1F-1B | Track | A62-530 | $ 967.50 |
| — | 0.20 | 3FB | Track | A62-495 | $ 979.00 |
| — | 4-4 | 2FB | Approach track | A62-532 | $ 991.00 |
| 10-12 | 17-17 | 3FB | Line | A62-533 | $ 1014.00 |
| 10-12 | 17-17 | 1FB-2F-1B | Line | A62-493 | $ 1014.00 |
| 10-12 | 100-100 | 1FB-2F-1B | Line | A62-494 | $ 1014.00 |
| 10-12 | 100-100 | 3FB | Line | A62-534 | $ 1014.00 |

# GRS B1 Code Responsive Relays

| Volts | Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|---|
| 2 | .14 | 2FB | Track relay | A62-155 | $ 842.00 |
| 2 | 22-22 | 2NR | Polar Stick relay | A62-600 | $ 1245.00 |
| 2 | .13-.55 | 2FB | Track relay | A62-589 | $ 1227.00 |
| 4 | 200 | 2FB | Line code repeater | A62-575 | $ 890.00 |
| 4 | 40 | 2FB | Impulse relay | A62-161 | $ 1245.00 |
| 10 | 80 | 4FB | Line code repeater | A62-157 | $ 890.00 |
| 10 | 200 | 2FB | Line code repeater | A62-156 | $ 843.00 |
| 10 | 200 | 2F-2B | L code rprt (tngstn) | A62-595 | $ 1213.00 |
| 10 | 60 | 2FB | Line code repeater | A62-162 | $ 962.00 |
| 10 | 300 | 2FB | Trakode line relay | A62-164 | $ 1053.50 |
| 10 | 1400 | 2FB | Line code repeater | A62-163 | $ 844.00 |
| 10 | 80 | 4FB | Line code repeater | A62-622 | $ 964.00 |
| 12 | 200 | 2FB | Line code repeater | A62-610 | $ 1133.50 |
| — | 34 | 2NR | Polar stick relay | A62-626 | $ 1245.00 |

# GRS B1 Two-Rate Charge Relays

| Ohms | Contacts | Cells (Lead Acid) | GRS Cat No. | Each |
|---|---|---|---|---|
| 705 | 1B | 4 to 7 | A62-475 | $ 965.00 |
| 1580 | 1B | 10 to 14 | A62-476 | $ 965.00 |
| 14105 | 1B | 50 to 60 | A62-477 | $ 965.00 |

# GRS B2 AC Vane Relays

| Local Volts | Track Volts | Hz | Contacts | GRS Cat No. | Each |
|---|---|---|---|---|---|
| 110/55 | 1.0/0.5 | 50 | 2F-2B | A62-485 | $ 1105.00 |
| 110/55 | 1.0/0.5 | 60 | 2F-2B | A62-486 | $ 1036.00 |
| 110/55 | 1.0/0.5 | 60 | 4F-4B | A62-547 | $ 1238.00 |
| 110/55 | 2.0/1.0 | 100 | 4F-4B | A62-597 | $ 795.50 |
| 110 | 5.0 | 60 | 2F-2B | A62-548 | $ 745.00 |

# GRS B2 Biased Neutral Relays

| Ohms | Contacts | Notes | GRS Cat | Each |
|---|---|---|---|---|
| 350 | 8FB-4F-2B | | A62-145 | $ 562.00 |
| 350 | 12FB | | A62-150 | $ 562.00 |
| 350 | 8FB-4F-2B | HD Contacts | A62-620 | $ 562.00 |

# GRS B2 Neutral Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 330 | 8FB-2F | EHD Contacts (2F) | A62-331 | $ 682.50 |
| 500 | 12FB | | A62-330 | $ 473.00 |
| 500 | 8FB-4F-2B | | A62-606 | $788.00 |
| 500 | 8FB-4F-2B | HD Contacts | A62-619 | $788.00 |

# GRS B2 Non-Locking Code Transmitter Relays

| Volts | Ohms | Contacts | Nominal Code Rate | GRS Cat No. | Each |
|---|---|---|---|---|---|
| 10 | 150 | 2F-2B | 75 | A62-170 | $ 1090.00 |
| 10 | 150 | 2F-2B | 96 | A62-591 | $ 1090.00 |
| 10 | 150 | 2F-2B | 120 | A62-171 | $ 1090.00 |
| 10 | 150 | 2F-2B | 180 | A62-172 | $ 1090.00 |
| 10 | 150 | 2F-2B | 270 | A62-173 | $ 1249.00 |
| 10 | 150 | 2F-2B | 75 | A62-175 | $ 1343.00 |
| 10 | 150 | 2F-2B | 120 | A62-176 | $ 1090.00 |
| 10 | 150 | 2F-2B | 180 | A62-177 | $ 1090.00 |
| 10 | 150 | 2F-2B | 270 | A62-178 | $ 1102.00 |

# GRS B2 Locking Type Code Transmitter Relays

| Volts | Ohms | Contacts | Nominal Code Rate | GRS Cat No. | Each |
|---|---|---|---|---|---|
| 28 | 150 | 2F-2B | 270 | A62-185 | $ 1858.00 |
| 28 | 150 | 2F-2B | 333 1/3 | A62-186 | $ 1655.50 |

# GRS B2 Motor Driven Timers

| Volts | Contacts Matl (CHK)/(TIME) | Time Range | GRS Cat No. | Each |
|---|---|---|---|---|
| 12 | 2 S-S / 2 S-S | 1-8 min | A62-453 | $ 748.00 |
| 12 | 2 S-S / 2 S-S | 4-64 sec | A62-452 | $ 748.00 |
| 10 | 2 S-S / 2 S-S | 1-8min | A62-451 | $ 748.00 |
| 10 | 2 S-S / 2 S-S | 4-64 sec | A62-450 | $ 748.00 |
| 8 | 2 S-S / 2 S-S | 1-8 min | A62-592 | $ 748.00 |
| 8 | 2 S-S / 2 S-S | 4-64 sec | A62-593 | $ 748.00 |
| 28 | 2 AgC-S / 2 AgC-S | 4-64 sec | A62-594 | $ 748.00 |
| 10 | 2 S-S / 2 AgC-S | 1-8 min | A62-581 | $ 748.00 |
| 10 | 2 S-S / 2 AgC-S | 4-64 sec | A62-582 | $ 748.00 |
| 12 | 2 S-S / 2 AgC-S | 1-8 min | A62-583 | $ 748.00 |
| 12 | 2 S-S / 2 AgC-S | 4-64 sec | A62-584 | $ 748.00 |
| 8 | 2 AgC-S / 2 AgC-S | 4-64 sec | A62-590 | $ 748.00 |
| 12 | 2 AgC-S / 2 AgC-S | 1-8 min | A62-621 | $ 748.00 |
| 12 | 2 AgC-S / 2 AgC-S | 4-64 sec | A62-618 | $ 748.00 |

# GRS B1 Thermal Timers

| Volts | Contacts | Htr Ohms | Time Range | GRS Cat No. | Each |
|---|---|---|---|---|---|
| 10 | 1F-1B | 11.3 | 18-30 secs | A62-458 | $ 365.50 |
| 12 | 1F-1B | 18.6 | 18-30 secs | A62-459 | $ 365.50 |
| 10 | 1F-1B | 11.3 | 25-45 secs | A62-464 | $ 394.00 |
| 12 | 1F-1B | 18.6 | 25-45 secs | A62-465 | $ 379.00 |
| 10 | 1F-1B | 11.3 | 45-130 secs | A62-462 | $ 972.50 |
| 12 | 1F-1B | 18.6 | 45-130 secs | A62-463 | $ 972.50 |
| 10 | 1F | 11.3 | 9-11 secs | A62-470 | $ 243.00 |
| 12 | 1F | 18.6 | 9-11 secs | A62-471 | $ 243.00 |

# GRS Microchron Timer Relays

| Volts | Contacts | Time Range | GRS Cat No. | Each |
|---|---|---|---|---|
| 8-15 | 2FB-3F-2B | 00:01-19:59 | A62-627 | $ 650.00 |
| 26.5-31.5 | 2FB-3F-1B | 00:01-19:59 | A62-628 | $ 650.00 |

# GRS B1 Flasher Relays

| Volts | Contacts | Flashing Rate | Notes | GRS Cat No. | Each |
|---|---|---|---|---|---|
| 8-16 | 4FB | 40-45 per minute | Relay Only | A62-577 | $ 205.50 |
| 8-16 | 4FB | 40-45 per minute | Relay with Flasher | A62-195 | $ 283.50 |
| 8-16 | 4FB | 40-45 per minute | Flasher Only | P62-769 | $ 80.50 |
| 8-16 | 4FB | 56-64 per minute | Relay Only | A62-577 | $ 205.50 |
| 8-16 | 4FB | 56-64 per minute | Relay with Flasher | A62-197 | $ 283.50 |
| 8-16 | 4FB | 56-65 per minute | Flasher Only | P62-784 | $ 80.50 |

# GRS Light-Out Neutral Relays

| Ohms | Contacts | For Use with Lamp | Max Amps | Rectifier Cat No. | Relay Cat No. | Each |
|---|---|---|---|---|---|---|
| .24 | 4FB | 10 V @ 60 Hz 5+3.5 W | .680 | A53-100 | A62-211 | $ 249.00 |
| .4 | 4FB | 10 V @ 60 Hz 13+3.5 W | .294 | A53-100 | A62-213 | $ 249.00 |
| 450-.45 | 4FB | 10 V @ 60 Hz 5 W | .3885 | A53-100 | A62-215 | $ 212.00 |
| 450-.069 | 4FB | 10 V @ 60 Hz 18+3.5 W | 1.52 | A53-100 | A62-217 | $ 286.00 |
| 450-.069 | 4FB | 10 V @ 60 Hz 18+3.5 W | 1.52 | A53-100 | A62-616 | $ 286.00 |
| 450-.12 | 4FB | 12-16 V @ 60 Hz 21 W | .883 | A53-100 | A62-221 | $ 210.50 |
| 450-.2 | 6FB | 10 V @ 60 Hz 21 W | .840 | A53-100 | A62-231 | $ 260.50 |
| 450-.61 | 4F-2B | 10 V @ 60 Hz 18+3.5 W | .300 | A53-100 | A62-236 | $ 286.00 |

# GRS Lamp Control Relay

| Ohms | Contacts | Voltage | GRS Cat No. | Each |
|---|---|---|---|---|
| 210 | 2FB-2B | 10 | A62-205 | $ 229.00 |

# GRS Magnetic Stick Relays

| Ohms | Contacts | Amps | GRS Cat No. | Each |
|---|---|---|---|---|
| 7 | 4NR, carbon-to-metal | .089 | A62-245 | $ 1187.50 |
| 34 | 4NR, carbon-to-metal | .036 | A62-246 | $ 1042.00 |
| 500 | 4NR, carbon-to-metal | .011 | A62-247 | $ 864.50 |
| 34 | 2NR(Ag pt), 2NR (tung) | .078 | A62-626 | $ 1245.00 |

# Safetran ST-1 Light-Out Neutral Relays

| Ohms | Contacts | For Use with Lamp | Max Amps | Safetran Cat No. | Each |
|---|---|---|---|---|---|
| .24 | 4FB | 10 V @ 60 Hz 5+3.5 W | .680 | 400303-X w/Rectifier | $ 450.00 |
| .24 | 4FB | 10 V @ 60 Hz 5+3.5 W | .680 | 400303 | $ 400.00 |
| 450/.069 | 4FB | 10 V @ 60 Hz 18+3.5 W | .0115/ 1.68 | 400302-X w/Rectifier | $ 401.00 |
| 450/.069 | 4FB | 10 V @ 60 Hz 18+3.5 W | .0115/ 1.68 | 400302 | $ 375.00 |
| 450/.12 | 4FB | 12-16 V @ 60 Hz 21 W | .115/ .833 | 400300-X w/Rectifier | $ 358.00 |
| 450/.12 | 4FB | 12-16 V @ 60 Hz 21 W | .115/ .883 | 400300 | $ 257.50 |
| 450/.2 | 6FB | 10 V @ 60 Hz 10 W | .016/ .840 | 400301-X w/Rectifier | $ 357.00 |
| 450/.2 | 6FB | 10 V @ 60 Hz 10 W | .016/ .840 | 400301 | $ 331.00 |

# SAFETRAN ST-1 & ST-2 NEUTRAL RELAYS

| Ohms | Contacts | Notes | ST Cat No. | Each |
|---|---|---|---|---|
| 1.8 | 6FB | Track | 400013 | $ 300.00 |
| 1.8 | 4FB-2F-1B | Track | 400012 | $ 263.00 |
| 4 | 6FB | Track | 400010 | $ 263.00 |
| 4 | 4FB-2F-1B | Track | 400011 | $ 263.00 |
| 50 | 4FB-2F-1B | Line | 400014 | $ 294.00 |
| 60 | 6FB | Line | 400028 | $ 339.00 |
| 84 | 6FB | Line | 400001 | $ 339.00 |
| 100 | 4FB-2F-1B | Line | 400015 | $ 275.00 |
| 200 | 2FB | EHD Lamp Control | 400021 | $ 263.00 |
| 350 | 4FB-2F-1B | HD Contacts | 400027 | $ 257.50 |
| 500 | 6FB | Line | 400000 | $ 257.50 |
| 500 | 4FB-2F-1B | Line | 400004 | $ 263.00 |
| 500 | 4FB-2F-1B | HD Contacts | 400020 | $ 260.00 |
| 500 | 4FB | HD Contacts | 400025 | $ 199.00 |
| 500 | 6FB | EHD Contacts | 400023 | $ 311.50 |
| 500 | 12FB | Line | 450000 | $ 552.00 |
| 900 | 6FB | Line | 400017 | $ 275.00 |
| 900 | 4FB-2F-1B | Line | 400003 | $ 263.00 |
| 900 | 4FB-2F-1B | HD Contacts | 400022 | $ 265.00 |
| 1800 | 4FB-2F-1B | Line | 400002 | $ 271.50 |

# SAFETRAN ST-2 AC VANE RELAYS

| Local Volts | Track Volts | Hz | Contacts | ST Cat No. | Each |
|---|---|---|---|---|---|
| 110/55 | 1.0/0.5 | 60 | 4F-4B | 450992 | Call |
| 110/55 | 2.0/1.0 | 100 | 4F-4B | 450993 | Call |
| 55 | 5.0 | 60 | 2F-2B | 450994 | Call |

# SAFETRAN ST BIASED SLOW ACTING RELAYS

| Ohms | Contacts | Characteristics | ST Cat No. | Each |
|---|---|---|---|---|
| 194 | 6FB | Slow Rel, 1s @.026a | 400530 | $ 275.00 |
| 800 | 6FB | Slow Pick, 1.25s @ .0119a | 400540 | $ 314.50 |
| 800 | 8FB-4F-2B | Slow Pick, 1.25-1.5s @ .0135 a (ST-2) | 450300 | $ 552.00 |

# SAFETRAN ST NEUTRAL SLOW ACTING RELAYS

| Ohms | Contacts | Characteristics | ST Cat No. | Each |
|---|---|---|---|---|
| 220 | 6FB | Slow Pick, 1.35s @.041a | 400100 | $ 397.00 |
| 300 | 4FB-2F-1B | Slow Pick, 1.4s @ .034a | 400101 | $ 397.00 |
| 24 | 2FB | Slow Rel, .4s @ .023 a | 400221 | $ 245.00 |
| 80 | 2FB-4B | Slow Rel, .1s @ .024 a | 400220 | $ 280.00 |
| 194 | 4FB | Slow Rel, 3s @12v .033a | 400200 | $ 226.00 |
| 194 | 4FB-2F-1B | Slow Rel, 1 sec @ .035 a | 400211 | $ 306.00 |
| 194 | 4FB-2F-1B | Slow Rel, 2.8s @10v .0335 a | 400212 | $ 375.00 |
| 194 | 6FB | Slow Rel, 1s @.035 a | 400210 | $ 280.00 |
| 260 | 12FB | Slow Rel, .825-1.1 s @10v .0231 a | 450200 | $ 587.00 |
| 460 | 2FB | Slow Rel, 3.0s @9v | 400213 | $ 307.00 |
| 194 | 4FB-2F-1B | Slow Pick, .046 a Slow Rel, 1.1 Sec | 400400 | $ 387.00 |

# SAFETRAN ST SWITCH OVERLOAD RELAYS

| Ohms | Contacts | Notes | ST Cat No. | Each |
|---|---|---|---|---|
| .064-135 | 2CBO | Low Voltage -18 amps | 400601 | $ 453.00 |
| .064-135 | 2CBO | High Voltage-12 amps | 400605 | $ 400.00 |
| .068-220 | 2CBO | High Voltage- 11.5 | 400602 | $ 294.00 |
| .068-1225 | 2B | High Voltage-12 amps | 400600 | $ 312.00 |
| .125-135 | 2CBO | High Voltage-7.5 amps | 400604 | $ 400.00 |

# SAFETRAN ST SWITCH CONTROL RELAYS

| Ohms | Contacts | Notes | ST Cat No. | Each |
|---|---|---|---|---|
| 500 | 4FB | Low Voltage—.019 a | 400025 | $ 199.00 |
| 500 | 2F-2B | Low or High Voltage | 400020 | $ 263.00 |

# SAFETRAN ST-1 & ST-2 BIASED NEUTRAL RELAYS

| Ohms | Contacts | Notes | ST Cat No. | Each |
|---|---|---|---|---|
| 0.5 | 4FB | Track | 400511 | $ 330.00 |
| 0.5 | 5F-4B | Track | 400515 | $ 318.50 |
| 0.5 | 5F-4B | Track | 400508 | $ 318.50 |
| 2 | 4FB-2F-1B | Track | 400510 | $ 330.00 |
| 2 | 6FB | Track | 400512 | $ 334.00 |
| 2 | 4FB | Track | 400518 | $ 334.00 |
| 4 | 5F-4B | Track | 400507 | $ 334.00 |
| 63 | 6FB | Series Line | 400501 | $ 334.00 |
| 100 | 4FB-2F-1B | Line | 400504 | $ 330.00 |
| 350 | 8FB-4F-2B | Line | 450501 | $ 552.00 |
| 350 | 12FB | Line | 450500 | $ 552.00 |
| 500 | 6FB | HD Contacts | 400505 | $ 374.00 |
| 500 | 6FB | Line | 400500 | $ 332.00 |
| 500 | 4FB-2F-1B | Line | 400502 | $ 330.00 |
| 500 | 4FB-2F-1B | HD Contacts | 400506 | $ 374.00 |
| 800 | 6FB | Line | 400516 | $ 298.00 |
| 800 | 8FB-4F-2B | Line | 450502 | $ 330.00 |
| 1000 | 2FB-4F-2B | Line | 400503 | $ 275.00 |
| 2000 | 4FB | Track (high DA/PU ratio track relay | 400517+ | $ 400.00 |
| 2100 | 2FB-4F-2B HD | Line | 400509 | $ 330.00 |

# SAFETRAN ST-1 FLASHER RELAYS

| Volts | Con-tacts | Flashing Rate | Relay Coil Nom. Resist Ohms | ST Cat No. | Each |
|---|---|---|---|---|---|
| 8-16 | 4FB | | 60 | 400700 | $ 332.00 |
| 8-16 | 4FB | 40-45 per minute | 60 w/400700-1X Flasher Module | 400700-X | $ 355.00 |
| 8-16 | 4FB | 56-64 per minute | 60 w/400700-8X Flasher Module | 400700-7X | $ 333.00 |

# SAFETRAN ST-1 POWER TRANSFER RELAYS

| Ohms | Contacts | Notes | ST Cat No. | Each |
|---|---|---|---|---|
| 100- | 6FB | 10VAC-Metal to Metal Cont. | 400800 | $ 270.00 |
| 100- | 6FB | 10VAC-w/400800-1X Recti- | 400800-X | $ 285.00 |
| 100- | 6FB | 10VAC-Metal to Carbon Cont. | 400801 | $ 270.00 |
| 100- | 6FB | 10VAC-w/400800-1X Recti- | 400801-X | $ 285.00 |
| 100- | 6FB | 12VAC-Metal to Metal Cont. | 400802 | $ 270.00 |
| 100- | 6FB | 12VAC-w/400800-1X Recti- | 400802-X | $ 285.00 |

# SAFETRAN POLAR RELAYS

| Ohms | Contacts | Notes | ST Cat No. | Each |
|---|---|---|---|---|
| 125/.14 | 4NR-2FB-2F | ST-2 | 450902 | $ 852.00 |
| 500 | 4FB-4NR | ST-2 | 450901 | $ 852.00 |
| 500 | 6NR | ST-2 | 450900 | $ 852.00 |
| 520 | 2NR | ST-1 | 400903 | $ 550.00 |

# SAFETRAN ST-1 MAGNETIC STICK RELAYS

| Ohms | Contacts | Amps | ST Cat No. | Each |
|---|---|---|---|---|
| 7 | 4NR, carbon-to-metal | .089 | 400904 | $ 650.00 |
| 26 x 26 | 2NR, silver platinum | .021 | 400901 | $ 820.00 |
| 500 | 4NR, carbon-to-metal | .011 | 400900 | $ 815.00 |

# SAFETRAN ST-1 CODE RESPONSIVE RELAYS

| Volts | Ohms | Contacts | Notes | ST Cat No. | Each |
|---|---|---|---|---|---|
| 10 | 80 | 4FB | Line code repeater | 400951 | $ 690.00 |
| 10 | 22-22 | 2NR | Polar stick relay | 400952 | $ 590.00 |
| 10 | 80 | 4FB | Line code repeater | 400954 | $ 590.00 |
| 12 | 200 | 2FB | Line code repeater | 400950 | $ 690.00 |
| 12 | 80 | 2FB | Line code repeater | 400953 | $ 590.00 |

# SAFETRAN VITAL TIMER RELAY

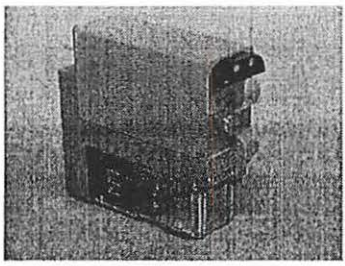
| Volts | Contacts | Time Range | GRS Cat No. | Each |
|---|---|---|---|---|
| 9.5-16 | 2FB-3F-2B | 00:05-15:55 | 451000-X | $ 820.00 |

# US&S Biased Slow Acting Plug-In Relay

| Ohms | Contacts | Characteristics | USS Cat No. | Each |
|---|---|---|---|---|
| 100 | 6FB | Slow Rel, 1s @ 5.56v | N322503-701 | $ 338.00 |
| 250 | 6FB | Slow Rel, 1 s @ 9 v | N322503-702/802 | $ 338.00 |
| 250 | 4FB-2F-1B | Slow Rel, 1 s @ 9 v | N322503-804 | $ 338.00 |
| 1400 | 6FB | Slow Pick, 1.05s @10v | N322551-701 | $ 551.50 |
| 2000 | 6FB | Slow Pick, 1.05s @10v | N322551-703/803 | $ 551.50 |
| 3000 | 6FB | Slow Pick, 1.05 s @ 10v | N322551-704 | |
| 350 | 6FB | Slow Pick 2.2s @ 10v Slow Rel, 1.1s @ 10v | N322551-702 | $ 564.00 |
| 500 | 6FB | Slow Pick & Slow Rel | N322551-705 | $ 564.00 |
| 225 | 4FB HD | Slow Rel 2.75-3.5s @ 8v | N322562-001 | $ 631.50 |
| 225 | 6FB | Slow Rel 2.75-3.5s @ 8v | N322552-702 | $541.00 |
| 350 | 6FB | Slow Rel 2.75-3.5s @ 10.4v | N322552-702 | |

# US&S Neutral DC Line PN-150N Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 240 | 6FB | With front testing | N322502-701 | $ 419.00 |
| 100 | 6FB | With front testing | N322502-702 | $ 419.00 |
| 25 | 6FB | With front testing | N322502-703 | $ 419.00 |



# US&S PN-150 & PN-250 Biased DC Line Relays

| Ohms | Contacts | Notes | USS Cat No | Each |
|---|---|---|---|---|
| 25 | 6FB | With front testing | N322500-706 | $ 306.50 |
| 100 | 6FB | With front testing | N322500-704 | $ 306.50 |
| 240 | 6FB | With front testing | N322500-705 | $ 306.50 |
| 400 | 6FB | No front testing-801 | N322500-701 | $290.50 |
| 800 | 6FB | No front testing-802 | N322500-702 | $290.50 |
| 1300 | 6FB | No front testing-803 | N322500-703 | $290.50 |
| 400 | 4FB-2F-1B | No front testing | N322500-809 | $ 306.50 |
| 800 | 4FB-2F-1B | No front testing | N322500-808 | $ 306.50 |
| 1300 | 4FB-2F-1B | No front testing | N322500-807 | $ 306.50 |
| 4300 | 6FB | No front testing | N322500-810 | $ 306.50 |
| 400 | 2FB-4F-4B | SIC w/front testing | N322500-711 | $ 508.00 |
| 100 | 3FB | With front testing | N322504-702 | $ 508.00 |
| 400 | 3FB | With front testing | N322504-701 | $ 508.00 |
| 800 | 3FB | No front testing-803 | N322504-703 | $ 508.00 |
| 25 | 3FB | With front testing | N322504-704 | $ 508.00 |
| 400 | 4FB(HD)-2FB | With front testing | N322505-701 | $ 368.00 |
| 800 | 4FB(HD)-2FB | With front testing | N322505-702 | $ 368.00 |
| 1300 | 4FB(HD)-2FB | No front testing | N322505-803 | $ 368.00 |
| 1000/250 | 6FB-6F-3B | No front testing-801 | N322554-701 | $ 616.50 |
| 1000/250 | 8FB-4F-2B | No front testing-802 | N322554-702 | $ 616.50 |

# US&S PP-151 Magnetic Stick Relays

| Ohms | Contacts | Amps | USS Cat No. | Each |
|---|---|---|---|---|
| 240 | 6NR SIC | W/front testing | N322507-701 | $ 625.00 |
| 25 | 6NR SIC | w/front testing | N322507-702 | $ 625.00 |
| 240 | 4NR SIC-2NR sil | W/front testing | N322516-701 | $ 625.00 |
| 400 | 6NR SIC | W/front testing | N438007-802 | $ 625.00 |
| 400 | 6NR SIC | No front testing | N438007-804 | $ 625.00 |
| 400/400 | 6NR SIC | No front testing | N437657 | $ 625.00 |

# US&S PN-150BM Magnetic Blowout Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 240 | 2F MHD | With front testing | N322517-001 | $ 388.00 |
| 240 | 2F-2B MHD | With front testing | N322524-001 | $ 381.50 |
| 240 | 3F MHD | With front testing | N322525-001 | $ 406.50 |

# US&S PN-150BTR Biased Track Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 1 | 6FB | No front test-801 | N322501-701 | $ 297.50 |
| 4 | 6FB | No front test-802 | N322501-702 | $ 307.00 |
| 11/25 | 6FB | With front testing | N322501-703 | $ 307.00 |
| 2 | 6FB | With front testing | N322501-704 | $ 307.00 |
| 13 | 6FB | With front testing | N322501-705 | $ 401.50 |

# US&S PN-150BH Biased High Dropaway Track Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 2/.5 | 1FB-1F-1B | With front testing | N322511-001 | $ 576.00 |
| 4/1 | 1FB-1F-1B | With front testing | N322511-002 | $ 588.50 |
| 400 | 1FB-1F-1B | With front testing | N322511-006 | $ 583.00 |
| 2000/500 | 1FB-1F-1B | With front testing | N322511-003 | $ 588.50 |
| 2.6/.65 | 1FB-1F-1B | With front testing | N322511-005 | $ 588.50 |
| 400 | 1FB-1F-1B | With front testing | N322511-007 | $ 583.00 |
| .125 | 1FB-1F-1B | With front testing | N322511-008 | $ 583.00 |
| .26 | 1FB-1F-1B | With front testing | N32511-009 | $ 583.00 |
| 6/1.5 | 1FB-1F-1B | With front testing | N32511-010 | $ 566.50 |
| 4/1 | 1FB-1F-1B | With front testing | N322511-011 | $ 566.50 |

# US&S PN-150SO & PN-152-SO Switch Control Relays

| Operating/Stick Ohms | Operating Time | USS Cat No. | Each |
|---|---|---|---|
| .039/135 | 40 s @ 8 amps | N322512-001 | $ 459.00 |
| .0135/135 | 35 s @ 15 amps | N322512-002 | $ 440.00 |
| .065/135 | 17 s @ 4 amps | N322512-003 | $ 440.00 |
| .025/135 | 10 s @ 14 amps | N322512-004 | $ 440.00 |
| .0456/750 | 5 s @ 13 amps | N322522-802 | $ 534.00 |
| .085/65 | 8 s @ 12 amps (AC) | N322519-001 | $ 534.00 |

# US&S PV-250 AC Vane Relays

| Local Volts | Hz | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| 115 | 60 | 6F-4B | No front test-801 | N322555- | $ 1137.50 |
| 115 | 25 | 6F-4B | With front testing | N322555- | $ 1137.50 |
| 115 | 60 | 6F-4B | With front testing | N322555- | $ 1137.50 |
| 115 | 100 | 6F-4B | With front testing | N322555- | $ 1137.50 |
| 115 | 60 | 6F-4B | No front test-805 | N322555- | $ 1137.50 |
| 115 | 60 | 2F-2B | No front test | N342555- | $ 1058.50 |
| 115 | 60 | 2F-2B | No front test | N342555- | $ 1058.50 |
| 115 | 90 | 2F-2B | No front test | N342555- | $ 1058.50 |
| 90 | 83.3 | 2F-2B | No front test | N342555- | $ 1058.50 |
| 115 | 60 | 2F-2B | No front test | N342555- | $ 1058.50 |
| 115 | 60 | 2F-2B | No front test-803 | N342555- | $ 1058.50 |
| 115 | 60 | 6F-4B | With front testing | N322555- | $ 1058.50 |

# US&S PF-256 Flasher Relays

| System Volts | Contacts | Flashing Rate | USS Cat No. | Each |
|---|---|---|---|---|
| 8-12 | 4NR | 45-55 per minute | N322561-001 | $ 398.00 |
| 8-12 | 4NR | 60-72 per minute | N322561-002 | $ 398.00 |
| 8-12 | 4NR | 45-55 per minute | N322561-801 | $ 398.00 |
| 8-12 | 4NR | 60-72 per minute | N322561-802 | $ 398.00 |
| 8-12 | 4NR | 69-81 per minute | N322561-803 | $ 398.00 |
| 8-12 | 4NR | 45-55 per minute | N322561-804 | $ 398.00 |
| 8-12 | 4NR | 60-72 per minute | N322561-805 | $ 398.00 |
| 8-12 | 4NR | 69-81 per minute | N322561-806 | $ 398.00 |

# US&S Thermal Timers

| Volts | Contacts | Htr Ohms | Time Range | USS Cat No. | Each |
|---|---|---|---|---|---|
| 10 | 1F-1B | 7 | 25-45 sec | N322518- | $ 398.00 |
| 10 | 1F-1B | 10 | 50-120 sec | N322518- | $ 398.00 |
| 12 | 1F-1B | 10 | 25-45 sec | N322518- | $ 398.00 |

# US&S PN-150BL Light-Out Relays

| Ohms | Contacts | For Use with Lamps (AC) | Coils | USS Cat No. | Each |
|---|---|---|---|---|---|
| .18 | 3FB | .85-3.0 amps | 1 | N322510-801 | $ 304.50 |
| .7 | 3FB | .40-3.0 amps | 1 | N322510-802 | $ 304.50 |
| .3/175 | 3FB | .85-3.0 amps | 2 | N322510-803 | $ 304.50 |
| .18 | 3FB | .85-3.0 amps | 1 | N322510-901 | $ 325.00 |
| .07 | 3FB | .40-3.0 amps | 1 | N322510-902 | $ 325.00 |
| .03/175 | 3FB | .85-3.0 amps | 2 | N322510-903 | $ 325.00 |
| .30/175 | 5FB | 1.0-3.0 amps | 2 | N322526-801 | $ 416.50 |
| .30/175 | 5FB | 1.0-3.0 amps | 2 | N322526-901 | $ 416.50 |
| 17.5 | 6FB | .25-0.5 amps | 1 | N322528-801 | $ 416.50 |
| 17.5 | 6FB | .25-0.5 amps | 1 | N322528-901 | $ 416.50 |

# US&S PN-50P Power Transfer Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 240 | 4FB HD | 10 Nominal volts AC | N322508-702 | $ 471.00 |
| 400 | 4FB HD | 10 Nominal volts AC | N322508-703 | $ 471.00 |

# US&S PT-55 Time Element Relays

| Volts | Mounting base | Time Range | USS Cat No. | Each |
|---|---|---|---|---|
| 16 | N347968 | 2.5-25 sec | N233133 | $ 260.00 |
| 16 | N347968 | 2.5-25 sec | N233133- | $ 260.00 |
| 10 | N294403 | 1.0-11 min. | N265422 | $ 260.00 |
| 16 | N292774 | .5-6 min. | N227899 | $ 260.00 |
| 12 | N292774 | .5-6 min. | N232138 | $ 260.00 |
| 16 | N374969 | 10-120 sec | N279987- | $ 260.00 |

# US&S PN-258BC Decoding Relay

| D.A. | Ohms | Contacts | USS Cat No. | Each |
|---|---|---|---|---|
| .77-.88 | 66 | 6FB | N322558-701 | $ 705.00 |

# US&S PC-250-B Code Following Relays

| Volts | Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| 10-12 | 135 | 4FB | LV contacts | N322559-003 | $ 865.00 |
| 10-12 | 135 | 4FB | HV contacts | N322559-004 | $ 865.00 |
| 10-12 | 135 | 4FB | 2 HV, 2LV con- | N322559-005 | $ 865.00 |
| - | 18.5 | 4FB | 1 HV, 3 LV con- | N322559-006 | $ 865.00 |
| - | .3/400 | 4FB | LV contacts | N322559-008 | $ 865.00 |
| 8-12 | 135 | 4FB | 1 HV, 3 LV con- | N322559-017 | $ 865.00 |

# US&S PC-250-P Code Following Relays

| Volts | Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| - | 20/20 | 4NR | LV contacts | N322559-016 | $ 1116.50 |
| - | 20/20 | 4NR | 2 N-HV, R-LV, | N322559-014 | $ 1116.50 |
| 8-12 | 180/18 | 4NR | HV contacts | N322559-012 | $ 1116.50 |
| 8-12 | 180/18 | 4NR | LV contacts | N322559-013 | $ 1116.50 |
| 8-12 | 20/20 | 4NR | 1 N-HV, R-LV, 3- | N322559-018 | $ 1116.50 |

# US&S PC-250-BE Code Following Relays

| Volts | Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| - | .30 | 2FB | LV | N342560-002 | $ 455.00 |
| - | .30 | 1FB | LV | N322560-004 | $ 455.00 |

## US&S PC-250-BAE Code Following Relays

| Volts | Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| - | .30/60 | 1F | LV | N322560-005 | $ 598.00 |

## US&S PN-150-BC Code Following Relays

| Volts | Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| 12 | 100 | 6FB | | N322509-701 | $ 705.00 |
| 10 | 240 | 6FB | | N322509-701 | $ 705.00 |
| 10-12 | 60 | 6FB | | N322509-703 | $ 705.00 |

## US&S PN-150-NE Code Following Relays

| Volts | Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| - | 60 | 1FB-1F-1B | | N322514-003 | $ 705.00 |
| 10-12 | 1000 | 1FB-1F-1B | | N322514-001 | $ 705.00 |
| - | 4/1 | 1FB-1F-1B | | N322514-004 | $ 705.00 |

## US&S PN-150-BE Code Following Relays

| Volts | Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| 10 | 60 | 1FB-1F-1B | | N322513-001 | $ 495.00 |
| - | 1000 | 1FB-1F-1B | | N322513-002 | $ 495.00 |
| - | 2000 | 1FB-1F-1B | | N322513-003 | $ 495.00 |
| - | 2000 | 1FB-1F-1B | | N322521-002 | $ 495.00 |

## US&S PN-250-BE Code Following Relays

| Volts | Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| - | 4 | 6FB | | N322550-702 | $ 817.00 |
| 10 | 55 | 6FB | | N322550-703 | $ 817.00 |
| - | 175 | 6FB | | N322550-704 | $ 817.00 |
| 12-24 | 2000 | 6FB | | N322550-706 | $ 817.00 |
| - | 2000 | 4FB-1F-1B | | N322550-707 | $ 817.00 |

## US&S PC-250TR Code Generating Relays

| Volts | Ohms | Contacts | Cycles/ | USS Cat No. | Each |
|---|---|---|---|---|---|
| 10-12 | 60 | 1F-2B-3F-4B | 50 | N322526-021 | $ 1055.50 |
| 16 | 90 | 1F-2B-3F-4B | 50 | N322526-017 | $ 1055.50 |
| 10-12 | 60 | 1F-2B-3F-4B | 75 | N322556-002 | $ 1055.50 |
| 10-12 | 60 | 1F-2B-3F-4B | 75 | N322556-005 | $ 1075.00 |
| 10-12 | 60 | 1F-2B-3F-4B | 75 | N322556-008 | $ 1075.00 |
| 16 | 90 | 1F-2B-3F-4B | 75 | N322526-012 | $ 1075.00 |
| 16 | 90 | 1F-2B-3F-4B | 75 | N322556-018 | $ 1055.50 |
| 16 | 90 | 1F-2B-3F-4B | 75 | N322556-818 | $ 1055.50 |
| 10-12 | 40 | 1F-2B-3F-4B | 120 | N322556-003 | $ 1055.50 |
| 10-12 | 40 | 1F-2B-3F-4B | 120 | N322556-006 | $ 1055.50 |
| 10-12 | 40 | 1F-2B-3F-4B | 120 | N322556-011 | $ 1075.00 |
| 16 | 60 | 1F-2B-3F-4B | 120 | N322526-013 | $ 1075.00 |
| 10-12 | 60 | 1F-2B-3F-4B | 180 | N322556-001 | $ 1055.50 |
| 10-12 | 60 | 1F-2B-3F-4B | 180 | N322526-004 | $ 1075.00 |
| 10-12 | 60 | 1F-2B-3F-4B | 180 | N322556-007 | $ 1075.00 |
| 16 | 90 | 1F-2B-3F-4B | 180 | N322526-014 | $ 1075.00 |
| 10-12 | 40 | 1F-2B-3F-4B | 270 | N322556-009 | $ 1055.50 |
| 10-12 | 40 | 1F-2B-3F-4B | 270 | N322556-010 | $ 1075.00 |
| 16 | 60 | 1F-2B-3F-4B | 270 | N322526-015 | $ 1075.00 |
| 10-12 | 40 | 1F-2B-3F-4B | 270 | N322526-019 | $ 1075.00 |
| 16 | 60 | 1F-2B-3F-4B | 420 | N322526-020 | $ 1075.00 |
| 10-12 | 40 | 1F-2B-3F-4B | 420 | N322526-022 | $ 1055.50 |
| 16 | 60 | 1F-2B-3F-4B | 420 | N322526-016 | $ 1075.00 |

## GRS Type K Biased Neutral Relay, Standard Line

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 500 | 2FB | | A65-120 | $ 270.00 |
| 500 | 4FB | | A65-127 | $ 335.00 |
| 670 | 6FB | | A65-700 | $ 425.00 |
| | | | | |

## GRS Type K 2 Approach Relay, Series Track

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| .42 | 2FB | | A65-100 | $ 270.00 |

## GRS Type K 2 Approach Relay, Series Line

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 17 | 2FB | | A65-110 | $ 270.00 |
| 60 | 2FB | | A65-112 | $ 270.00 |

## GRS Type K Biased Neutral Relay, Specific Application Line

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 100 | 2FB | | A65-158 | $ 270.00 |
| 50 | 2FB | | A65-701 | $ 270.00 |
| 250 | 6FB (HD) | | A65-702 | $ 425.00 |

## GRS Type K Biased Neutral Relay, Standard Track

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| .50 | 2FB | | A65-118 | $ 270.00 |

## GRS Type K2 Code Responsive Relay

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| .16 | 2FB | Track | A65-170 | $ 525.00 |
| 180 | 2FB | Line code repeater | A65-175 | $ 525.00 |
| .6 | 1F | Track | A65-704 | $ 525.00 |
| 7 | 2FB | Track | A65-705 | $ 525.00 |
| 38 | 2FB | Track | A65-706 | $ 525.00 |
| .16 | 2FB | Track | A65-707 | $ 525.00 |

## GRS Type K Code Transmitters

| Ohms | Contacts | Nom. Code Rate | GRS Cat No. | Each |
|---|---|---|---|---|
| 5.5 | 2F-2B | 75 | A65-189 | $ 525.00 |
| 150 | 2F-2B | 75 | A65-190 | $ 525.00 |
| 150 | 2F-2B | 120 | A65-195 | $ 525.00 |
| 150 | 2F-2B | 180 | A65-199 | $ 525.00 |

# GRS Type K Flasher Relays

| Volts | Con-tacts | Flash/ minute | Notes | GRS Cat No. | Each |
|---|---|---|---|---|---|
| 8-16 | 4FB | 40-45 | Highway crossing | A65-213 | $ 460.00 |
| 8-16 | 4FB | 56-64 | Highway crossing | A65-217 | $ 460.00 |
| 10 | 1B | 60 | Wayside signal | A65-215 | $ 460.00 |
| 12 | 1B | 60 | Wayside signal | A65-216 | $ 460.00 |

# GRS Type K Lamp Control Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 300 | 2FB-2B | 10-12 system volt | A65-250 | $ 335.00 |
| 184 | 4FB-2B | 5 system volt | A65-708 | $ 335.00 |

# GRS Type K Light Out Relays

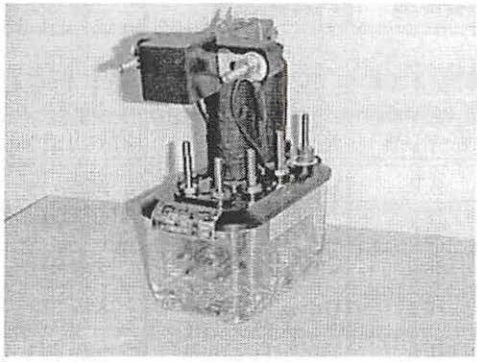
| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| .51 | 2FB | Use w/8v lamp | A65-714 | $ 335.00 |
| .102 | 2FB | | A65-260 | $ 335.00 |
| .069 | 2FB | Use w/10 v lamp | A65-261 | $ 335.00 |
| 500-.069 | 2FB | Use w/10 v lamp | A65-263 | $ 335.00 |
| 400-.069 | 2FB | Use w/11 v lamp | A65-264 | $ 335.00 |
| 500-.080 | 4FB | Use w/8 v lamp | A65-272 | $ 425.00 |

# GRS Type K Neutral Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 2 | 2FB | | A65-300 | $ 270.00 |
| 4 | 2FB | | A65-301 | $ 270.00 |
| 500 | 2FB | | A65-305 | $ 270.00 |
| 2 | 4FB | | A65-310 | $ 335.00 |
| 4 | 4FB | | A65-311 | $ 335.00 |
| 500 | 4FB | | A65-315 | $ 335.00 |
| 28-.04 | 4FB | Compound relay | A65-709 | $ 335.00 |
| 2 | 6FB | | A65-320 | $ 425.00 |
| 4 | 6FB | | A65-321 | $ 425.00 |
| 500 | 6FB | | A65-325 | $ 425.00 |

# GRS Type K Neutral Relays
## Specific Applications

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 280 | 2FB | HD contacts | A65-345 | $ 425.00 |
| 50 | 4FB | Pulse bridging | A65-351 | $ 550.00 |
| 100 | 4FB | | A65-353 | $ 550.00 |
| 500 | 4FB | HD contacts | A65-355 | $ 550.00 |
| 500 | 4FB | EHD contacts | A65-356 | $ 550.00 |
| 6 | 4FB | Overlay track circuit | A65-359 | $ 550.00 |
| 500 | 6FB | HD contacts | A65-365 | $ 625.00 |
| 55 | 6FB | Coded track receiver | A65-703 | $ 625.00 |



# GRS Type K Neutral Relays
## Slow Acting

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 880 | 4FB | Slow pick, 1.5 sec @ 11.5 volts | A65-376 | $ 375.00 |
| 880 | 6FB | Slow pick, 1.5 sec @ 11.5 volts | A65-386 | $ 425.00 |
| 350 | 4FB | Slow pick 2.3 s & Slow rel 1.1 s @ 10 v. | A65-405 | $ 375.00 |
| 350 | 6FB | Slow pick, 1.5 s @ 11.5 volts & Slow rel, 1.2 s @ 9 volts | A65-409 | $ 425.00 |
| 400 | 4FB | Slow rel, 1 sec @ .0225 amp | A65-420 | $ 375.00 |
| 400 | 6FB | Slow rel, 1 sec @ .0225 amp | A65-425 | $ 425.00 |

# GRS Type K Neutral Relays Slow Acting Specific Application

| Ohms | Contacts | Release | GRS Cat No. | Each |
|---|---|---|---|---|
| 250 | 4FB | 4 sec @ .040 A | A65-435 | $ 425.00 |
| 500 | 4FB | 2 sec @ .020 A | A65-437 | $ 425.00 |
| 500 | 4FB | .9 sec @ .0166 A | A65-439 | $ 425.00 |
| 500 | 4FB (HD-F) | .090 front contact openings | A65-710 | $ 425.00 |
| 38 | 6FB | Partial slow release | A65-711 | $ 550.00 |

# GRS Type K Polar Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 500 | 4FB-2NR | | A65-461 | $ 695.00 |

# GRS Type K Power Off Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 132-132 | 2FB | 10 AC volt | A65-480 | $ 375.00 |
| 50-50 | 4FB | 10 AC volt | A65-485 | $ 425.00 |
| 50-50 | 6FB | 10 AC volt | A65-490 | $ 475.00 |

# GRS Type K Switch Control Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 500 | 4FB(HD) | Low voltage | A65-355 | $ 650.00 |
| 500 | 4FB (EHD) | High voltage | A65-356 | $ 750.00 |
| 500 | 4FB (2F-HD) | Low voltage | A65-712 | $ 750.00 |

# GRS Type K Switch Overload Relays

| Ohms | Contacts | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| .066-125 | 2CBO | Low voltage | A65-570 | |
| .066-125 | 2CBO | High voltage | A65-571 | |

# GRS Type KB Motor Driven Timing Relays

| Volts | Contacts | Time Range | GRS Cat No. | Each |
|---|---|---|---|---|
| 10 | 2 check/2 time | 4-64 seconds | A65-609 | $ 655.00 |
| 10 | 2 check/2 time | 1-8 minutes | A64-610 | $ 655.00 |
| 12 | 2 check/2 time | 4-64 seconds | A65-612 | $ 655.00 |
| 12 | 2 check/2 time | 1-8 minutes | A65-613 | $ 655.00 |
| 10 | 2 check/2 time | 4-64 seconds | A65-717 | $ 655.00 |
| 10 | 2 check/2 time | 1-8 minutes | A65-716 | $ 655.00 |
| 12 | 2 check/2 time | 4-64 seconds | A65-719 | $ 655.00 |
| 12 | 2 check/2 time | 1-8 minutes | A65-718 | $ 655.00 |

# GRS Type T -Class A Thermal Timing Relays

| Ohms | System Volt | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 11.3 | 10 | 5-6 seconds | A65-635 | $ 595.00 |
| 11.3 | 10 | 9-11 seconds | A65-636 | $ 595.00 |

# GRS Type T - Class G & J Thermal Timing Relays

| Ohms | System Volt | Notes | GRS Cat No. | Each |
|---|---|---|---|---|
| 11.3 | 10 | 18-30 seconds | A65-643 | $ 595.00 |
| 11.3 | 10 | 25-45 seconds | A65-644 | $ 595.00 |
| 11.3 | 10 | 45-130 seconds | A65-646 | $ 595.00 |
| 7.6 | 8 | 18-30 seconds | A65-713 | $ 595.00 |
| 18.6 | 12 | 45-130 seconds | A65-648 | $ 595.00 |
| 18.6 | 12 | 18-30 seconds | A65-649 | $ 595.00 |

# SAFETRAN E-5 NEUTRAL RELAY REGULAR RELEASE

| Ohms | Contacts | Notes | ST Cat No. | Each |
|---|---|---|---|---|
| 2 | 4FB | | 040300-26AX | $ 295.00 |
| 2 | 6FB | | 040300-104AX | $ 325.00 |
| 4 | 4FB | | 040300-26BX | $ 295.00 |
| 4 | 6FB | | 040300-104BX | $ 325.00 |
| 150 | 4FB | | 040300-26EX | $ 295.00 |
| 150 | 6FB | | 040300-104HX | $ 325.00 |
| 500 | 4FB | | 040300-26HX | $ 295.00 |
| 500 | 6FB | | 040300-104HX | $ 325.00 |
| 1000 | 4FB | | 040300-26JX | $ 295.00 |
| 1000 | 6FB | | 040400-104JX | $ 325.00 |

# SAFETRAN E-5 NEUTRAL RELAY SLOW RELEASE

| Ohms | Contacts | Notes | ST Cat No. | Each |
|---|---|---|---|---|
| 500 | 4FB | .9 sec delay | 040300-60HX | $ 375.00 |
| 500 | 6FB | .9 sec delay | 040300-114HX | $ 425.00 |
| 1000 | 4FB | .9 sec delay | 040300-60JX | $ 375.00 |
| 1000 | 6FB | .9 sec delay | 040300-114JX | $ 425.00 |
| 250 | 4FB | 3.5 sec delay | 040300-63FX | $ 375.00 |

# SAFETRAN E-1 FLASHER RELAY

| Volts | Contacts | Notes | ST Cat No. | Each |
|---|---|---|---|---|
| 12 | 4FB | 35-55 FPM | 040300-17HX | $ 450.00 |

# SAFETRAN E-7 POWER TRANSFER RELAY

| Ohms | Contacts | Notes | ST Cat No. | Each |
|---|---|---|---|---|
| 150 | 4FB | 10-12 VAC | 040300-47EX | $ 425.00 |
| 150 | 6FB | 10-12 VAC | 040300-110EX | $ 475.00 |

# US&S DN-11 Neutral Line Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 55 | 4FB | | N213536 | $ 295.00 |
| 60 | 4FB | | N159679 | $ 295.00 |
| 250 | 4FB | | N159996 | $ 295.00 |
| 500 | 4FB | | N157285 | $ 295.00 |
| 1000 | 4FB | | N157187 | $ 295.00 |
| 1500 | 4FB | | N161396 | $ 295.00 |
| 500 | 4FB HD | | N214333 | $ 325.00 |
| 500 | 4F-2B-2B(HD) | | N231336 | $ 325.00 |
| 175 | 4FB | | N257117 | $ 295.00 |
| 670 | 4FB HD | | N213667 | $ 325.00 |
| 1000 | 4FB HD | | N214494 | $ 325.00 |
| 1000 | 2FB-2FB | Special contacts | N214711 | $ 450.00 |
| 670 | 8FB | | N157353 | $ 525.00 |
| 500 | 8FB | | N159870 | $ 525.00 |
| 1000 | 8FB | | N161333 | $ 525.00 |
| 500 | 6FB | | N159871 | $ 450.00 |
| 670 | 6FB | | N159864 | $ 450.00 |
| 1000 | 6FB | | N158263 | $ 450.00 |
| 1000 | 6FB SIC | | N160025 | $ 450.00 |
| 500 | 2FB-4FB HD | | N262423 | $ 325.00 |
| 1000 | 6FB HD | | N222664 | $ 450.00 |

# US&S DN-11 Neutral Slow Drop Relays

| Ohms | Contacts | Characteristics | USS Cat No. | Each |
|---|---|---|---|---|
| 400 | 4FB | Slow Rel, 1s @ 7.5 v | N157284 | $ 385.00 |
| 500 | 4FB | Slow Rel, 1s @ 9.38 v | N157188 | $ 385.00 |
| 250 | 4FB | Slow Rel, 1.8s @ 8 v | N168295 | $ 385.00 |
| 250 | 6FB | Slow Rel, 1s @ 8.07v | N168245 | $ 435.00 |
| 400 | 6FB | Slow Rel, 1 s @ 9.25 v | N159553 | $ 435.00 |
| 500 | 6FB | Slow Rel, 1s @ 11.55 v | N173931 | $ 435.00 |
| 200 | 8F-6B | Slow Rel, 1 s @ 7.33 v | N207618 | $ 495.00 |

# US&S DN-11 Neutral Track Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| .5 | 4FB | | N163068 | $ 295.00 |
| 1 | 4FB | | N212441 | $ 295.00 |
| 2 | 4FB | | N152232 | $ 295.00 |
| 4 | 4FB | | N150956 | $ 295.00 |
| 1 | 4FB | Quick acting | N164255 | $ 295.00 |
| 2 | 6FB | | N161744 | $ 325.00 |
| 4 | 6FB | | N142676 | $ 325.00 |
| .5 | 2FB | | N224087 | $ 275.00 |
| 4 | 2FB | | N224089 | $ 275.00 |

# US&S DN-11B Biased Line Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 500 | 4FB | | N274069 | $ 385.00 |
| 1000 | 4FB | | N274070 | $ 385.00 |

# US&S DN-11C Biased Line Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 55 | 6FB | | N221112 | $ 435.00 |
| 175 | 6FB | | N257119 | $ 435.00 |
| 500 | 2FB | | N272937 | $ 335.00 |

# US&S DN-11B Biased Track Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| .5 | 4FB | | N378639 | $ 295.00 |
| 2 | 4FB | | N274064 | $ 295.00 |
| 500 | 4FB | | N274069 | $ 295.00 |
| 1000 | 4FB | | N274070 | $ 295.00 |

# US&S DN-11P Power Off Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 75/75 | 4FB HD | 10 Vac | N220131 | $ 430.00 |
| 125/125 | 4FB HD | 12 Vac | N214021 | $ 430.00 |

# US&S DN-22A Neutral Line Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 16 | 2FB | | N224121 | $ 265.00 |
| 40 | 2FB | | N224122 | $ 265.00 |
| 60 | 2FB | | N224123 | $ 265.00 |
| 500 | 2FB | | N239397 | $ 265.00 |
| 1000 | 2FB | | N224890 | $ 265.00 |
| 2000 | 2FB | | N224382 | $ 265.00 |
| 1000 | 2FB HD | | N251714 | $ 265.00 |
| 2000 | 2FB | | N300717 | $ 265.00 |
| 2000 | 2F SIC-1B | | N316906 | $ 265.00 |

# US&S DN-22 Neutral Track Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| .5 | 2FB | | N224087 | $ 265.00 |
| 4 | 2FB | | N224089 | $ 265.00 |

# US&S DN-22B Biased Line Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 500 | 2FB | | N272937 | $ 275.00 |

# US&S DN-22B Biased Track Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 500 | 2FB | | N272937 | $ 275.00 |

# US&S DN-22BH Biased Track Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| .5 | 2FB | High dropaway | N268030 | $ 295.00 |
| 4 | 2FB | High dropaway | N267247 | $ 295.00 |
| 500 | 2FB | High dropaway | N373702 | $ 295.00 |

## US&S DN-22P Power Off Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 75/75 | 2FB HD | 10 Vac | N223526 | $ 360.00 |
| 125/125 | 2FB HD | 12 Vac | N224029 | $ 360.00 |

## US&S DN-22A Neutral Slow Drop Relays

| Ohms | Contacts | Characteristics | USS Cat No. | Each |
|---|---|---|---|---|
| 250 | 2FB | Slow Rel, 1s @ 5.8v | N224388 | $ 360.00 |
| 400 | 2FB | Slow Rel, 1 s @ 6.68 v | N224389 | $ 360.00 |
| 500 | 2FB | Slow Rel, 1 s @ 8.35 v | N224390 | $ 360.00 |
| 1500 | 2FB | Slow Rel, 1 s @ 13 v | N224392 | $ 360.00 |
| 1500 | 2F-1FB | Slow Rel, 1 s @ 13 v | N234820 | $ 360.00 |
| 1500 | 2FB | Slow Rel, 1 s @ 13 v | N285645 | $ 360.00 |

## US&S DN-22L Light Control Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| .185 | 2FB | 60 Hz | N223430 | $ 335.00 |
| .08 | 2FB | 60 Hz | N224396 | $ 335.00 |
| 1000/.25/.25 | 2FB | DC/DC/60 Hz | N245804 | $ 335.00 |
| 500/.16/.16 | 2FB | DC/DC/60 Hz | N318991 | $ 335.00 |
| 200/.16/.16 | 2FB | DC/DC/60 Hz | N292908 | $ 335.00 |

## US&S DNL-4 Approach Lighting Control Line Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| 78 | 2FB S-S | | N231022 | $ 295.00 |

## US&S DNL-4 Approach Lighting Control Track Relays

| Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|
| .14 | 2FB | | N185106 | $ 295.00 |
| .14 | 2FB | | N185161 | $ 295.00 |

## US&S DM Code Transmitter Relay

| Volts | Ohms | Contacts | USS Cat No. | Each |
|---|---|---|---|---|
| 8-12 | 55 | 4FB silver platinum to silver plat | N242041- | $ 1000.00 |
| 8-12 | 55 | 4FB tungsten to tungsten | N242043 | $ 1000.00 |
| 8-12 | 510 | 2FB silver platinum to silver plat | N221553- | $ 1000.00 |
| 8-12 | 55 | 4FB silver platinum to silver plat | N221558 | $ 1000.00 |
| 8-12 | 55 | 4FB silver platinum to silver plat | N221560 | $ 1000.00 |
| 8-12 | 55 | 2FB silver platinum to silver plat | N221552 | $ 1000.00 |
| 8-12 | 55 | 4FB silver platinum to silver plat | N221559 | $ 1000.00 |
| 8-12 | 55 | 2FB-2FB special | N297120 | $ 1000.00 |
| 8-12 | 55 | 2FB-2FB tungsten to tungsten | N221561 | $ 1000.00 |
| 8-12 | 55 | 4FB tungsten to tungsten | N221557 | $ 1000.00 |

## US&S CD Code Responsive Relays

| Volts | Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| | .30 | 2FB | | N232752 | $ 1000.00 |
| | .30 | 4FB | | N232753 | $ 1000.00 |
| | .30/400 | 4FB | | N275968 | $ 1000.00 |
| | 18.5 | 4FB | | N210440 | $ 1000.00 |
| 10/12 | 225 | 4FB | | N216174 | $ 1000.00 |
| | 18.5 | 1FB-3FB | | N207810 | $ 1000.00 |
| 8/12 | 135 | 4FB | | N223414 | $ 1000.00 |

## US&S CDP Code Responsive Relays

| Volts | Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| 8/12 | 135 | 4NR | Magnetic stick | N265760 | $ 1000.00 |
| | 20/20 | 2N-2N & 4R | Magnetic stick | N382761 | $ 1000.00 |

## US&S P-4 Code Responsive Relays

| Volts | Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| | .30 | 2FB | Track-high eff. | N222391 | $ 795.00 |
| | .30 | 2FB | Track-high eff. | N22390 | $ 795.00 |
| | .30 | 1FB | Track-high eff. | N264821 | $ 795.00 |
| | 1900 | 1N-1R | CTC-high eff. | N216112 | $ 795.00 |
| | .30/15 | 1F | Approach ctrl | N273463 | $ 795.00 |

## US&S DN-18C Code Responsive Relays

| Volts | Ohms | Contacts | Notes | USS Cat No. | Each |
|---|---|---|---|---|---|
| | 64 pr | 4FB | | N217453 | $ 390.00 |
| | 64 pr | 6FB | | N217454 | $ 390.00 |
| | 100 | 2FB | | N223421 | $ 390.00 |
| | 55 | 2FB | | N224080 | $ 390.00 |
| | 200 | 2FB | | N265686 | $ 390.00 |

# US&S FN16A Flasher Relays

| Volts | Contacts | Flashing Rate | USS Cat No. | Each |
|---|---|---|---|---|
| 10-12 | 4NR | 50 fpm | N265738 | $ 460.00 |
| 10-12 | 4NR | 50 fpm | N265739 | $ 460.00 |

# US&S FN-27 Flasher Relays

| Volts | Contacts | Flashing Rate | USS Cat No. | Each |
|---|---|---|---|---|
| 10-12 | 2N & 2R | 40-60 fpm | N280688 | $ 460.00 |
| 10-12 | 1FB-1B | 50 fpm | N396250 | $ 460.00 |

# US&S FN-28 Flasher Relays

| Volts | Contacts | Flashing Rate | USS Cat No. | Each |
|---|---|---|---|---|
| 10-12 | 1FB-1B | 50 fpm | N396250 | $ 460.00 |

# US&S DT-10 Time Element Relay

| Volts | Contacts | Ohms/pair | Time Interval | USS Cat | Each |
|---|---|---|---|---|---|
| 10 | 4FB | 28-550 | .5-6.0 minutes | N160333 | $ 660.00 |
| 12 | 4FB | 48-800 | .5-6.0 minutes | N164369 | $ 660.00 |
| 10 | 4FB | 28-550 | 2-24 minutes | N180723 | $ 660.00 |
| 10 | 4FB | 28-550 | 1-12 minutes | N185066 | $ 660.00 |
| 8 | 4FB | 18-350 | 1-12 minutes | N210269 | $ 660.00 |
| 12 | 4FB | 48-800 | 2-24 minutes | N287431 | $ 660.00 |

# US&S TH-10 Thermal Timers

| Volts | Contacts | Front Time | Total Time | USS Cat No. | Each |
|---|---|---|---|---|---|
| 10 | 1F, 1B S- | 10-18 sec | 45-70 sec | N183881 | $ 550.00 |
| 10 | 1F, 1B S- | 10-18 sec | 80-110 sec | N183883 | $ 550.00 |
| 10 | 1F, 1B S- | 15-27 sec | 70-110 sec | N183884 | $ 550.00 |
| 10 | 1F, 1B S- | 25-35 sec | 110-135 sec | N183885 | $ 550.00 |
| 10 | 1F, 1B S- | 60-80 sec | 180-220 sec | N187707 | $ 550.00 |
| 10 | 1F, 1B S- | 5-12 sec | 25-45 sec | N267940 | $ 550.00 |

# US&S DP-14 polar line Relays

| Ohms | Neutral Contacts | Polar Contacts | USS Cat No. | Each |
|---|---|---|---|---|
| 10 | Without | 2NR SIC | N294218 | $ 795.00 |
| 250 | 4FB | 4NR SIC | N174609 | $ 795.00 |

## US&S DP-14 POLAR TRACK RELAY

| Ohms | Neutral Contacts | Polar Contacts | USS Cat No. | Each |
|---|---|---|---|---|
| 1000 | 4FB | 4NR SIC | N163686 | $ 795.00 |

## US&S DP-21 RETAINED NEUTRAL POLAR LINE RELAYS

| Ohms | Neutral Contacts | Polar Contacts | USS Cat No. | Each |
|---|---|---|---|---|
| 250 | 4FB | 2NR SIC | N187490 | $ 695.00 |
| 250 | 4FB | 2NR SIC | N194313 | $ 695.00 |
| 400 | 4FB | 4NR SIC | N228105 | $ 695.00 |
| 670 | 4FB | 4NR SIC | N213977 | $ 695.00 |

## US&S DN-18 NEUTRAL SLOW ACTING RELAYS

| Ohms | Contacts | Characteristics | USS Cat No. | Each |
|---|---|---|---|---|
| 2200/pr | 4FB | Slow Pick, 1 s @ 10v | N196833 | $ 375.00 |
| 2200 | 6FB | Slow Pick 1s @ 10v | N183895 | $ 425.00 |
| 3000 | 6FB | Slow Pick, 1s @ 12 v | N213987 | $ 425.00 |
| 350 | 4FB | Slow Pick, 2.3s @ 10v<br>Slow Rel, 1.1s @ 10 v | N172634 | $ 375.00 |

## US&S DN-19 NEUTRAL ORDINARY PICK-SLOW DROP RELAYS

| Ohms | Contacts | Characteristics | USS Cat No. | Each |
|---|---|---|---|---|
| 350 | 4FB | Slow Rel, 2s @ 7.8 v | N187950 | $ 375.00 |
| 225 | 4FB | Slow Rel, 2 s @ 6 v | N179495 | $ 375.00 |

## US&S DN-19A NEUTRAL SLOW DROP RELAYS

| Ohms | Contacts | Characteristics | USS Cat No. | Each |
|---|---|---|---|---|
| 225 | 4FB | Slow Rel, 4-5s @10v | N331643 | $ 375.00 |
| 225 | 4FB HD | Slow Rel, 2.75-4.25 @10v | N336023 | $ 375.00 |

## US&S OR-10 Switch Overload Relays (DC)

| Ohms | Notes | USS Cat No. | Each |
|---|---|---|---|
| 5 | | N185351 | $ 325.00 |

## US&S OR-11 Switch Overload Relays (DC)

| Ohms | Notes | USS Cat No. | Each |
|---|---|---|---|
| .0135 | 6s @ 20A; 25 s @ 15A | N295420 | $ 325.00 |
| .021 | 12s@16A; 17s @ 11.5A | N248583 | $ 325.00 |
| .036 | 8s @ 12A; 40s @ 8A | N295421 | $ 325.00 |

## US&S OR-20 Switch Overload Relay

| Voltage | Notes | USS Cat No. | Each |
|---|---|---|---|
| 110 | 60 Hertz; 20 s @8A | N190093 | $ 425.00 |

## US&S DP-25 Magnetic Blowout Relays

| Ohms | Neutral Contacts | Polar Contacts | USS Cat No. | Each |
|---|---|---|---|---|
| 280 | 2F MHD | 2NR SIC-2NR SS | N312692 | $ 795.00 |
| 450 | 2F MHD | 2NR SIC-2NR SS | N312693 | $ 795.00 |
| 1000 | 2F MHD | 2NR SIC-2NR SS | N313694 | $ 795.00 |

## SEARCHLIGHT SIGNAL MECHANISMS

| MFR | Type | Aspects / Configuration | Cat No. | Each |
|---|---|---|---|---|
| GRS | SA | G-R-Y 160 ohms Stepped Lens | 53052 | $ 450.00 |
| GRS | SA | Y-R-L 160 ohms Stepped Lens | 53052 | $ 450.00 |
| GRS | SA | G-R-Y 160 ohms Compound Lens | 53052 | $ 450.00 |
| GRS | SA | Y-R-L 160 ohms Compound Lens | 53052 | $ 450.00 |
| GRS | SA | G-R-Y 250 ohms Stepped Lens | 53052 | $ 450.00 |
| GRS | SA | Y-R-L 250 ohms Stepped Lens | 53052 | $ 450.00 |
| GRS | SA | G-R-Y 250 ohms Compound Lens | 53052 | $ 450.00 |
| GRS | SA | Y-R-L 250 ohms Compound Lens | 53052 | $ 450.00 |
| GRS | SA | G-R-Y 380 ohms Stepped Lens | 53052 | $ 450.00 |
| GRS | SA | Y-R-L 380 ohms Stepped Lens | 53052 | $ 450.00 |
| GRS | SA | G-R-Y 380 ohms Compound Lens | 53052 | $ 450.00 |
| GRS | SA | Y-R-L 380 ohms Compound Lens | 53052 | $ 450.00 |
| GRS | SA-1 | G-R-Y 250 ohms Stepped Lens | A76-157 | $ 550.00 |
| GRS | SA-1 | Y-R-L 250 ohms Stepped Lens | A76-157 | $ 550.00 |
| GRS | SA-1 | G-R-Y 250 ohms Compound Lens | A76-154 | $ 550.00 |
| GRS | SA-1 | Y-R-L 250 ohms Compound Lens | A76-154 | $ 550.00 |
| U.S. S. | H-2 | G-R-Y | | $ 550.00 |
| U.S. S. | H-2 | Y-R-L | | $ 550.00 |
| U.S. S. | H-5 | G-R-Y | | $ 450.00 |
| U.S. S. | H-5 | Y-R-L | | $ 450.00 |

# U.S.& S. Switch Machines

| Model | Mtr DC Volts | Description | Each |
|---|---|---|---|
| M22 | 20 | Single control, specify 3/5 wire control | $ 5200.00 |
| M3 | 20 | Single control, specify 3/5 wire control | $ 5200.00 |
| M3 | 110 | Single control, specify 3/5 wire control | $ 5200.00 |
| M23A | 20 | Dual control, 360:1 gear ratio, 15 sec throw, specify 3/5 wire control | $ 5800.00 |
| M23A | 20 | Dual control, 528:1 gear ratio, 26 sec throw, specify 3/5 wire control | $ 5800.00 |
| M23A | 110 | Dual control, 189:1 gear ratio, 4.5 sec throw, specify 3/5 wire control | $ 5800.00 |
| M23B | 20 | Dual control, 360:1 gear ratio, 15 sec throw, specify 3/5 wire control | $ 5800.00 |
| M23B | 20 | Dual control, 528:1 gear ratio, 26 sec throw, specify 3/5 wire control | $ 5800.00 |
| M23B | 110 | Dual control, 189:1 gear ratio, 4.5 sec throw, specify 3/5 wire control | $ 5800.00 |
| A5 | Air | Single switch, 5: cylinder | $ 5800.00 |
| A5 | Air | Single switch, 5" cylinder | $ 5800.00 |
| A5 | Air | Double slip switch, 6" cylinder | $ 6500.00 |
| A5 | Air | Moveable point frog, 6" cylinder | $ 6500.00 |
| A5 | Air | Moveable point frog 7" cylinder | $ 6800.00 |
| CP | Air | CP Control valve for A5 switch machines | $ 3750.00 |
| T20 T21 | Hand | Switch & Lock movement | $ 3500.00 |
| DA-10 | Air | Direct acting yard switch machine | $ 3200.00 |
| NA-15 | Air/ Hand | Dual control yard switch machine | $ 3600.00 |
| A10 | Air | Transit style switch machine | $ 5300.00 |

# GRS Switch Machines

| Model | Mtr DC Volts | Description | Each |
|---|---|---|---|
| 5A | 110 | Single control, dynamic indication | $5,200.00 |
| 5B | 110 | Dual control, dynamic indication, outboard brake | $ 5,600.00 |
| 5C | 24 | Single control, specify 12V or 24V Biased Neutral Controller, outboard brake | $ 6,000.00 |
| 5C | 110 | Single control, specify 12V or 24V Biased Neutral Controller, outboard brake | $ 6,000.00 |
| 5D | 24 | Dual control, specify 12V or 24V Biased Neutral Controller, outboard brake | $ 6,200.00 |
| 5D | 110 | Dual control, specify 12V or 24V Biased Neutral Controller, outboard brake | $ 6,200.00 |
| 5E | 110 | Single control w/ magnetic detent & dynamic snubbing | $5,600.00 |
| 5E | 24 | Single control w/ magnetic detent & dynamic snubbing | $ 5,600.00 |
| 5F | 110 | Dual control w/ magnetic detent & dynamic snubbing | $ 5,800.00 |
| 5F | 24 | Dual control w/ magnetic detent & dynamic snubbing | $ 5,800.00 |
| 5G | 110 | Single control w/ magnetic detent & dynamic snubbing, specify 12V or 24V Biased Neutral Controller | $ 6,000.00 |
| 5G | 24 | Single control w/ magnetic detent & dynamic snubbing, specify 12V or 24V Biased Neutral Controller | $ 6,000.00 |
| 5H | 110 | Dual control w/ magnetic detent & dynamic snubbing, specify 12V or 24V Biased Neutral Controller | $ 6,200.00 |
| 5H | 24 | Dual control w/ magnetic detent & dynamic snubbing, specify 12V or 24V Biased Neutral Controller | $ 6,200.00 |
| 55E | 24 | Single control w/ dynamic snubbing | $ 5,600.00 |
| 55G | 24 | Single control w/ dynamic snubbing, specify 12V or 24V Biased Neutral Controller | $ 5,800.00 |
| 55H | 24 | Dual control w/ dynamic snubbing, 12V or 24V Biased Neutral Controller | $ 5,800.00 |
| 6 | 110 | Single control yard machine | $ 5,600.00 |

# Misc Switch Machines

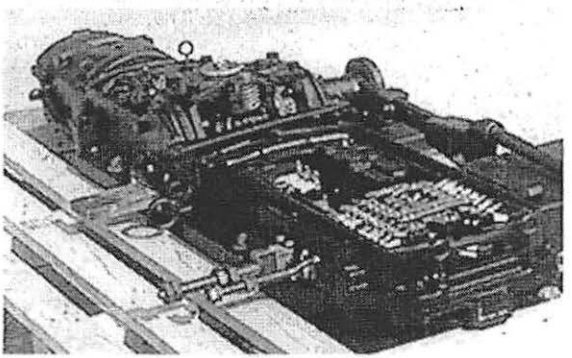
| Item Description | Each |
|---|---|
| Abex Model HM-11F yard switch machine (NOS) | $6800.00 |
| | |

# Switch Circuit Controllers

| Item Description | Each |
|---|---|
| GRS Model 7J Switch Circuit Controller | $550.00 |
| GRS Model 7K Switch Circuit Controller | $550.00 |
| US&S Model U-5 Switch Circuit Controller | $550.00 |
| WCH Switch Circuit Controller | $550.00 |
| Centering Device, GRS Switch Circuit Controller | $ 125.00 |

# Electric Switch Locks

| Item Description | Each |
|---|---|
| GRS Model 9B Electric Lock, High | $ 1950.00 |
| GRS Model 9B Electric Lock, Dwarf | $ 1950.00 |
| GRS Model 10 | $ 1200.00 |
| US&S Model SL-6A, High | $ 1950.00 |
| US&S Model SL-6A, Dwarf | $ 1950.00 |
| US&S Model SL-21A | $ 2450.00 |
| US&S Model SL25 | $ 2300.00 |
| US&S Model SL26 | $ 1950.00 |
| | |



# MISC HARDWARE

| Item Description | Each |
|---|---|
| Kerite Tower & Case Wire, #10AWG, 1000' (NOS) | $ 140.00 |
| GRS Sealed Resistor 5 ohms | $ 10.00 |
| GRS Variable Resistor 2 ohms | $ 10.00 |
| Safetran Terminal Block, 6 terminals | $ 5.00 |
| Safetran gold test nut | $ .25 |
| Safetran Adjustable Resistor, 28 ohms (NOS) | $ 20.00 |
| Safetran Adjustable Resistor, 5 ohms (NOS) | $ 20.00 |
| Safetran Clearview Arrestor 022485-31X (NOS) | $ 10.00 |
| Safetran Clearview Arrestor 022485-32X (NOS) | $ 10.00 |
| | |
| GRS Throw Rod Adjusting Wrench (NOS) | $ 36.00 |
| | |

# POWER SUPPLIES

| Item Description | Each |
|---|---|
| LaMarche Rectifier, A40-10-10/18V (NOS) | $ 335.00 |
| NRS 24VDC Rectifier, ERBC 24-30 (NOS) | $ 335.00 |
| Cragg Railcharger, 520467 | $ 335.00 |
| Safetran HT-1222 Rectifier (NOS) | $ 150.00 |
| Safetran HT-1344 Rectifier (NOS) | $ 150.00 |
| Safetran HT-1527 Rectifier (NOS) | $ 150.00 |
| US&S W-10 Transformer | $ 50.00 |
| | |
| | |

# ELECTRONICS

| Item Description | Each |
|---|---|
| EPC Electro-Code 2 Cabinet (AS IS) | $ 50.00 |
| Harmon Non-Vital Logic Controller (NOS) | $ 1600.00 |
| Harmon NVIO module cable, 10' (NOS) | $ 25.00 |
| Harmon AFTAC Island 250109-014 | $ 600.00 |
| Safetran SMTC 4900 Hz 6A393-4900 (NOS) | $ 650.00 |
| Safetran SMTC 7100 Hz 6A393-7100 (NOS) | $ 650.00 |
| Safetran SOTC 5900 Hz 7A191-5900 (NOS) | $ 650.00 |
| Safetran PSO Coupler 970 Hz 7A355A (NOS) | $ 135.00 |
| Servo Dual Wheel Detector 400032-37 (NOS) | $ 400.00 |
| Harmon Line Overlay Xmtr 1210B-1.08Hz (NOS) | $ 650.00 |
| Harmon Line Overlay Xmtr 1210B-1.19Hz (NOS) | $ 650.00 |
| Harmon SSF-1 Solid State Flasher | $ 650.00 |
| Harmon Narrow Band Shunt 250516-606 (NOS) | $ 350.00 |
| Safetran Narrow Band Shunt 62780-86Hz (NOS) | $ 350.00 |
| Safetran Tuneable NBS 8A275-156Hz (NOS) | $ 350.00 |
| Safetran Tuneable NBS 8A275-78Hz (NOS) | $ 400.00 |
| Safetran Adjustable Inductor 8A398-6 (NOS) | $ 195.00 |
| Safetran Surge Protector SP19-2B (NOS) | $ 65.00 |

## CASES & HOUSINGS

| Item Description | Each |
|---|---|
| Safetran pole mount, single door Jct. Case | $ 150.00 |
| L&W Instrument case, alum, high single door (NOS) | $ 350.00 |
| Safetran instrument case, alum, 4'11" | $ 500.00 |
| Lincoln instrument case, alum, high double door (NOS) | $ 1100.00 |
| L&W instrument case, alum, low single door (NOS) | $ 400.00 |
| L&W instrument case, alum, low double door (NOS) | $ 650.00 |
| Emergency release boxes, w/ mounting hardware | $ 100.00 |

# Wiring, Assembly & Installation Services

| Description | Labor Charges |
|---|---|
| * On site field survey—in prep for new project (per man / per day) | $ 560.00 |
| * Signal Engineer field service (per man / per day) | $ 560.00 |
| * Technician field service (per man / per day) | $ 440.00 |
| * Signal Gang field installation | Quoted per Job |
| Shop labor—Wiring Intermediate Signal locations, in signal cases, with electronic controls | $ 1600.00 |
| Shop labor—Wiring Intermediate Signal locations, in signal cases, with all relay based controls | $ 2200.00 |
| Shop labor— Wiring Train Control systems, in bungalows up to 8 x 10, with electronic controls (per bungalow) | $ 3600.00 |
| Shop labor— Wiring Train Control systems, in bungalows up to 8 x 10, with all relay based controls (per bungalow) | $ 4900.00 |
| Shop labor—Wiring Highway Crossing locations, in signal cases, with electronic controls | $ 1600.00 |
| Shop labor—Wiring Highway Crossing locations, in signal cases, with all relay based controls | $ 2200.00 |
| Shop labor— Wiring Highway Crossing systems, in bungalows up to 8 x 10, with electronic controls (per bungalow) | $ 3600.00 |
| Shop labor— Wiring Highway Crossing systems, in bungalows up to 8 x 10, with all relay based controls (per bungalow) | $ 4900.00 |
| Shop labor—Wiring Short Line / Industrial single track Highway Crossing locations, in signal cases, Style "C" Controls | $ 1400.00 |

* plus actual travel & subsistence expenses

# Cafeteria Engineering Services

| Engineering Plan Set Description | Engineering Charges |
|---|---|
| Generic Bi-Directional Intermediate / Approach Signal Location, Route Signaling, Electro-Code 4 Plus, includes application program | $ 1100.00 |
| Generic Bi-Directional Intermediate / Approach Signal Location, Speed Signaling, Electro-Code 4 Plus, does not include application program | $ 1350.00 |
| Generic Electro-Code 4 Plus Repeater location, includes application program | $ 1400.00 |
| Generic Electro-Lock location, includes application program | $ 1100.00 |
| Generic End-of-Siding location, Route Signaling, Harmon VHLC controls, includes application program | $ 1350.00 |
| Generic End-of-Siding location, Speed Signaling, Harmon VHLC controls, does not include application program | $ 1700.00 |
| Generic Universal Crossover location, Route Signaling, Harmon VHLC controls, includes application program | $ 1500.00 |
| Generic Universal Crossover location, Speed Signaling, Harmon VHLC controls, does not include application program | $ 1850.00 |
| Generic Highway Crossing, single track, predictor or motion sensor controls | $ 1250.00 |
| Generic Highway Crossing, double track, predictor or motion sensor controls | $ 1400.00 |
| Generic Highway Crossing, single track, Style "C" controls | $ 750.00 |
| Generic Highway Crossing, double track, Style "C" controls | $ 1000.00 |

Some restrictions apply to cafeteria pricing. For more information about how *SignalMasters®, Inc.* Cafeteria Style Engineering can help reduce your project engineering costs, please call for full details.

# Custom Engineering Services

| Description | Labor Charges |
|---|---|
| Custom Design Engineering—Train Control Systems | Quoted by Job |
| Custom Design Engineering — Highway Crossings | Quoted by Job |
| Application Program Development | Quoted by Job |
| Plan Revisions w/ marked up AIS inspection, in existing CAD format w/ customer supplied electronic media | "B" Sheet—$ 50.00<br>"C" Sheet—$ 70.00<br>"D" Sheet—$ 90.00<br>"E" Sheet—$ 100.00 |
| Drafting conversion of paper / mylar plans to CAD format (DrafixCAD, QwkCAD, AutoCAD & Microstation formats) | "B" Sheet—$ 70.00<br>"C" Sheet—$ 90.00<br>"D" Sheet—$ 110.00<br>"E" Sheet—$ 125.00 |
| Plan reproductions, (per sheet, labor & matl) | $ 5.00 |
| Project design scheme development | $ 70.00 per hour |
| Project specifications development | Quoted by Job |
| Project Cost Estimates (per location) | $ 150.00 |
| Project Management | 7% of project cost |
| Preparation of filings for governmental agencies | $ 300.00 |
| Preparation of supporting engineering documentation for governmental filings | $ 70.00 per hour |
| * Representation at governmental agency hearings (per man / per day) | $ 560.00 |

Standard Engineering Drawing Sheet Sizes:

B = 11" x 17"  C = 17" x 22"  D = 22' x 34"  E = 34" x 44"

* plus actual travel & subsistence expenses

# TERMS OF SALES

This catalog lists all items that we ***service and repair*** — not necessarily items currently in stock or on hand. Since our inventory is constantly changing, just call and we'll let you know if we currently have it in stock. For out of stock items, we'll be happy to repair and return your rebuildable core.

The catalog list prices shown are 50% of the cost of the new items, and generally apply to one-of-a-kind repair jobs. Volume discounts, repeat customer discounts or term service contract discounts may apply in your particular situation — please call for details and specific quotes on various levels of service available from *SignalMasters® Inc.*

All prices are FOB, Monee, Illinois and do not include taxes of any kind. Shipping will be prepaid via best way available and added to the invoice amount. Payment terms are Net 30.

The price quoted per item applies only to generally complete rebuildable cores. The quoted price does not include new or secondhand body castings or covers, or replacement of a missing/ damaged or canabalized major sub-assembly. The addition of any of these items would increase the cost of remanufacturing and will not be undertaken without prior customer approval.

Missing/Damaged is defined as those parts that are missing or physically damaged beyond normally expected wear and tear. (Such as derailment damage) Serviceable secondhand parts are used to the fullest extent possible, to minimize costs. All serviceable secondhand parts are invoiced at 50% of new value, and are subject to availability.

Customers may choose from one of two late charge plans we have— 1-1/2% per month on the unpaid balance or we'll move the decimal point one place to the right on the unpaid balance at the end of each month!

# WARRANTY INFO

All equipment rebuilt by *SignalMasters® Inc.* carries a "better-than-new" warranty. We'll be happy to send you specific details on individual items — here are the warranty periods for the common repairs:

**— 5 Years —**

Switch Machines, Electric Locks, Switch Circuit Controllers

**— 4 Years —**

Plug-in and Shelf type Relays

**— Forever —**

Design Engineering & Programming

*Signal Masters, Inc.*

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Monee, IL 60449